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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/049,627	04/16/2002	Ah Hwee Tan	P21834	7768

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EXAMINER

COUGHLAN, PETER D

ART UNIT	PAPER NUMBER
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2129

DATE MAILED: 02/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/049,627

Applicant(s)

TAN ET AL.

Examiner

Peter Coughlan

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4 and 8-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 8-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25/8/2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## Detailed Action

1. This office action is in response to an AMENDMENT entered November 28, 2005 for the patent application 10/049627 filed on April 16, 2002.
2. The First Office Action of May 26, 2005 is fully incorporated into this Final Office Action by reference.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 8-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Register et al in view of Alam, and further in view of Tan, and further in view of Witek, and further in view of Kannan, and further in view of Tan2( U. S. Patent 5371807, referred to as **Register**;

U. S. Patent 6104500, referred to as **Alam**; 'Learning user profiles for personalized information dissemination', referred to as **Tan**; U. S. Patent 5461488, referred to as **Witek**; 'A Hybrid architecture for text classification', referred to as **Kannan**; 'Cascade ARTMAP: integrating neural computation and symbolic knowledge processing', referred to as **Tan2**)

Claim 1.

Register teaches a feature extractor that extracts a plurality of features from a document (**Register**, C4:54-66; Examiner's Note (EN) 'Plurality of features' of applicant is equivalent to 'extract as much information as possible' of Register.); and a classifier operable on the extracted features to process the document in a knowledge acquisition mode in which the association of a classification with the document is added incrementally to a knowledge base (**Register**, C11:54 through C12:24; EN By adjusting weights, the system is acquiring knowledge via a relevance feedback learning module.); and in a document classification mode in which the classifier, using the knowledge base, is operable to determine predicted classification for the document (**Register**, abstract); the classifier being switchable between the modes under user control. (**Register**, C11:54-68; EN By invoking to make adjustments demonstrates the ability to switch modes.)

Register does not teach a router arranged to route the document to one of a plurality of destinations in the dependence upon classification, wherein the classification has associated therewith a confidence value; and wherein the confidence value is

comparable to a threshold, the router being arranged to make at least one of an automatic routing decision and a manual routing decision in dependence upon the comparison.

Alam teaches a router arranged to route the document to one of a plurality of destinations in the dependence upon classification, wherein the classification has associated therewith a confidence value (**Alam**, C5:59 through C6:10; EN 'Confidence value' of applicant is equivalent to 'likelihood' of Alam.);

and wherein the confidence value is comparable to a threshold, the router being arranged to make at least one of an automatic routing decision and a manual routing decision in dependence upon the comparison. (**Alam**, C5:59 through C6:10 & C10:26-34)

It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify the teachings of Register by using the router to compare confidence values (likelihood) with thresholds and if no results were found to move to a manual route practice as taught by Alam to have a router arranged to route the document to one of a plurality of destinations in the dependence upon classification, wherein the classification has associated therewith a confidence value; and wherein the confidence value is comparable to a threshold, the router being arranged to make at least one of an automatic routing decision and a manual routing decision in dependence upon the comparison.

For the purpose of segmenting the task of routing to be within the router.

Claims 2 and 4.

Register and Alam do not teach a supervised adaptive resonance theory (ART) system and the system comprises an adaptive resonance associative map (ARAM) system.

Tan teaches a supervised adaptive resonance theory (ART) system and the system comprises an adaptive resonance associative map (ARAM) system. (Tan, abstract; EN It should be noted that ARAM is the combination of two ART systems therefore the use of an ARAM inherently includes the use of at least one ART.) It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify the combined teachings of Register and Alam by incorporating ART and ARAM as taught by Tan to have supervised adaptive resonance theory (ART) system and the system comprises an adaptive resonance associative map (ARAM) system.

For the purpose of fast learning guaranteed perfect storage, full memory and noise immunity.

Claim 3.

Register and Alam do not teach the use of an ARTMAP system. Tan teaches the use of an ARTMAP system. (Tan, C2:11-13; EN An ARTMAP system is an art equivalent of an ARAM.) It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify the combined

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teachings of Register and Alam by having access to an ARTMAP system as taught by Tan to have the use of an ARTMAP system.

For the purpose of having two ART modules.

Claims 5-7.

(Cancelled)

Claims 8 and 18.

Register teaches the threshold is adjustable. (**Register**, C5:34-61; EN 'Adjustable' of applicant is equivalent to 'dynamic' of Register.)

Claim 9.

Register does not teach wherein destination is a system administrator workstation where the document is routed, for manual routing after the manual routing decision.

Alam teaches the destination is a system administrator workstation where the document is routed, for manual routing after the manual routing decision. (**Alam**, C10:26-34) It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify the teachings of Register by having a system administrator be available for documents that could not classified as taught by Alam to have the destination is a system administrator workstation where the document is routed, for manual routing after the manual routing decision.

For the purpose of having in place a system where either the system or a system administrator can classify all documents.

Claim 10.

Register discloses that the features are formed into a feature vector for input to the classifier. (**Register**, C4:64-66; EN A vector is consider to be the same as the features since it is the machine operable version of a feature.)

Claim 11.

Register discloses that the features comprise classification associated words and phrases which may appear in the document. (**Register**, C4:58-62)

Claim 12.

Register teaches the feature extractor is arranged to provide a measure of the frequency of occurrence of the features in the document. (**Register**, C8:16-21; EN 'Feature extractor' of applicant is equivalent to 'intelligent inferencer module' of Register.)

Claim 13.

Register, Alam and Tan do not teach the destinations include a system administrator workstation to which other destinations are connected, misrouted



documents being sendable by other destinations to the system administrator workstation for manual routing.

Witek teaches the destinations include a system administrator workstation to which other destinations are connected, misrouted documents being sendable by other destinations to the system administrator workstation for manual routing. (**Witek**, C4:57 through C5:3; EN 'Other destinations are connected' by applicant is equivalent to 'default disk space for access by all users of computers'. ) It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify combined teachings of Register, Alam and Tan by having a human being as a back up plan for mistakes made and problems not able to solve as taught by Witek to have the destinations include a system administrator workstation to which other destinations are connected, misrouted documents being sendable by other destinations to the system administrator workstation for manual routing.

For the purpose of an additional plan for problem when they arise.

#### Claim 14.

Register, Alam, Tan and Witek do not teach the system administrator workstation is connected to the feature extractor and the classifier, the arrangement being such that a misdirected document, in association with an actual classification supplied at the system administrator workstation is processed in the knowledge acquisition mode to add the association of the actual classification with the misdirected document to the knowledge base.

Kannan teaches the system administrator workstation is connected to the feature extractor and the classifier, the arrangement being such that a misdirected document, in association with an actual classification supplied at the system administrator workstation is processed in the knowledge acquisition mode to add the association of the actual classification with the misdirected document to the knowledge base. (**Kannan**, p290, C2:5-10; EN The purpose of adjusting the keyword weights (knowledge base) is for the purpose of improving routing accuracy.) It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify combined teachings of Register, Alam, Tan and Witek by having the system administrator have the ability to modify the weights as taught by Kannan to have the system administrator workstation is connected to the feature extractor and the classifier, the arrangement being such that a misdirected document, in association with an actual classification supplied at the system administrator workstation is processed in the knowledge acquisition mode to add the association of the actual classification with the misdirected document to the knowledge base.

For the purpose of improving the system to have a higher accuracy in it's classification task.

#### Claim 15.

Register, Alam, Tan, Witek, and Kannan do not teach the computer implemented document classification apparatus being operable to perform rule insertion in the

knowledge acquisition mode in which a plurality of features are input by a user to the classifier together with a classification with which the features are associated.

Tan2 teaches the computer implemented document classification apparatus being operable to perform rule insertion in the knowledge acquisition mode in which a plurality of features are input by a user to the classifier together with a classification with which the features are associated. (**Tan2**, p237 C2:22 through p238 C1:20; EN Cascade ARTMAP teaches that ARTMAP systems recognized categories learned by the category nodes are compatible with rules that link antecedents to consequents.) It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify combined teachings of Register, Alam, Tan, Witek, and Kannan by being able to insert rules into an ARTMAP as taught by Tan2 to have the computer implemented document classification apparatus being operable to perform rule insertion in the knowledge acquisition mode in which a plurality of features are input by a user to the classifier together with a classification with which the features are associated.

For the purpose of gaining improved accuracy and efficiency.

Claim 16.

Register teaches an computer implemented document classification apparatus that is operable in the knowledge acquisition mode to process a plurality of training documents with associated classifications as a batch. (**Register**, C6:10-22)

Claim 17.

Register teaches feature extractor that extracts a plurality of features from a document, (**Register**, C4 lines 54-66),

a classifier operable, using a knowledge base, to determine from the features a predicted classification for the document the classification having a confidence value associated therewith (**Register**, C5:49-56; EN 'Classifier' and 'confidence value' of applicant is equivalent to 'similarity measuring module' and similarity scores' of Register.);

Register does not teach a router arranged to compare the confidence value to the threshold and make a decision to route the document automatically to one of a plurality of destinations and to a destination for manual routing in dependence upon the comparison.

Alam teaches a router arranged to compare the confidence value to the threshold and make a decision to route the document automatically to one of a plurality of destinations and (**Alam**, C5:59 through C6:10; EN 'Confidence value' of applicant is equivalent to 'likelihood' of Alam.); to a destination for manual routing in dependence upon the comparison, (**Alam**, C5:59 through C6:10 & C10:26-34) It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify the teachings of Register by having the router handle confidence and threshold values and apply them as taught by Alam to have a router arranged to compare the confidence value to the threshold and make a decision to route the document

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automatically to one of a plurality of destinations and to a destination for manual routing in dependence upon the comparison.

For the purpose of keep all the tasks of using confidence values and compared to threshold values along with manual routing in needed to ensure proper routing ability.

### ***Response to Arguments***

4. Applicant's arguments filed on November 25, 2005 for claims 1, 7, 17 have been fully considered but are not persuasive.

5. In reference to the Applicant's argument:

As another initial matter, Applicants note that, on the Office Action Summary form (PTOL-326), the Examiner indicates that claims 5, 7, 8 and 17 are allowed and claims 9, 13 and 14 are objected to. However, in the Office Action, the Examiner rejects each of these claims. Applicants respectfully request clarification by the Examiner.

Examiner's response:

Detailed office action applies rejecting claims 1-18.

6. In reference to the Applicant's argument:

To support the rejection of claim 7, the Examiner asserted that col. 15, lines 40-59 of Register discloses a classification associated with a confidence value comparable to a threshold, where a router is arranged to make an automatic routing

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or manual decision in dependence upon the comparison. Applicants strongly disagree.

Examiner's response:

Claim 7 was cancelled by applicant.

7. In reference to the Applicant's argument:

Applicants respectfully submit that Register fails to disclose (or even suggest) that the classification of a document has an associated confidence value which is comparable to a threshold value. Although Register discloses, in col. 5, lines 48-50, that "[t]he module 36 determines profile weights and combines the profile weights to arrive at similarity scores for all the categories", Register then goes on to disclose, in col. 5, lines 56-59, that "[t]he categories whose similarity scores are above the threshold are compiled into a list and are passed to the next module or directly to the external application." Applicants respectfully submit that, since all of Register's categories are compared with the threshold, and those which have similarity scores which are above the threshold are passed (to the next module or external application), no classification of the document has yet been determined. Applicants submit that this processing is merely a comparison of the similarity score for each of the possible categories the document could be with a threshold. Thus, Applicants submit that Register does not disclose comparing a confidence value of a classification of a document with a threshold, as recited in Applicants' independent claim 1.

As Register does not disclose comparing a confidence value of a classification of a document with a threshold, Applicants respectfully submit that Register certainly does not disclose a router arranged to make an automatic routing or manual routing decision in dependence on such a comparison, as recited in Applicants' independent claim 1.

For at least these reasons, Applicants respectfully submit that the 35 U.S.C. §102(e) rejection of independent claim 1 is improper, and respectfully request withdrawal of the rejection and allowance of the claim.

Examiner's response:

Weights can be adjusted and there exists a threshold. The confidence value of applicant is equivalent to the similarity score of Register. At this point classification is complete. First Office Action applies.

8. In reference to the Applicant's argument:

Applicants' independent claim 17 recites a computer implemented document classification apparatus which includes, inter alia, a router arranged to compare a confidence value to a threshold and make a decision to route a document automatically to one of a plurality of destinations or to a destination for manual routing in dependence upon the comparison. As discussed above, Register fails to disclose these features.

For at least these reasons, Applicants respectfully submit that the 35 U.S.C. §102(e) rejection of independent claim 17 is also improper, and respectfully request withdrawal of the rejection and allowance of the claim.

Examiner's response:

Alam address these concerns in C5:59 through C6:10. Applicant's confidence value' is equivalent to Alam 'likelihood'. These values are then compared to a threshold. First Office Action applies.

9. In reference to the Applicant's argument:

Applicants respectfully submit that Tan, "Profile Learning", Alam, "Text Classification", and "Cascade ARTMAP" fail to overcome the deficiencies of Register. Regarding Alam, Applicants submit that Alam merely discloses the use of a threshold comparison to determine an addressee of a fax message. Applicants submit that Alam is not directed towards document classification. Rather, as set forth in col. 4, lines 64-67, Alam is directed towards a system for converting faxes to email and routing the email containing the converted fax for subsequent retrieval by the fax's addressee. Applicants submit that Alam does not disclose a router which is arranged to make an automatic or manual routing decision in dependence upon a comparison between a document classification

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confidence value and a threshold. Rather, Alam positively teaches away from such a router, as Alam seeks to rely on the fact that, inherently, email is routed automatically to the correct user. See col. 4, lines 22-23. Applicants respectfully submit that any consideration of a combination of Register and Alam must be made in this context, and, as such, the very idea of having to make a decision to route manually or automatically is completely counter-intuitive to the teaching of Alam.

Furthermore, Alam requires a comparison of a separation between a best likelihood name match with a second-best likelihood name match with a threshold. Thus, Applicants submit that Alam cannot be adapted for use in the claimed invention.

For at least the reasons set forth above, Applicants respectfully submit that one of ordinary skill in the art would not be motivated to combine the teachings of Register and Alam, as the two references provide disparate teachings. Register deals with compilation of a similarity score for predefined categories in a knowledge base and passing of the categories whose similarity scores are above a threshold to an external application, whereas Alam is directed to converting fax messages to email and routing the email to the correct addressee of the fax.

Thus, Applicants respectfully submit that the combination of Register, Alam and/or any of the other applied prior art fails to disclose or suggest a router arranged to make an automatic routing or manual routing decision in dependence upon a comparison of a confidence value and a threshold, as recited in independent claims 1 and 17.

Examiner's response:

Register discloses a classification system based on text content using a threshold minimum requirement and a learning capability to improve accuracy. Alam adds to this by using a resulting value compared to a threshold value for acceptance into a category or proper routing destination. If the resulting value is below a threshold value, classification of the routing destination is preformed manually. First Office Action applies.

### ***Examination Considerations***



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10. The claims and only the claims form the metes and bounds of the invention.

“Office personnel are to give the claims their broadest reasonable interpretation in light of the supporting disclosure. *In re Morris*, 127 F.3d 1048, 1054-55, 44USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Limitations appearing in the specification but not recited in the claim are not read into the claim. *In re Prater*, 415 F.2d, 1393, 1404-05, 162 USPQ 541, 550-551 (CCPA 1969)” (MPEP p 2100-8, c 2, I 45-48; p 2100-9, c 1, I 1-4). The Examiner has the full latitude to interpret each claim in the broadest reasonable sense. Examiner will reference prior art using terminology familiar to one of ordinary skill in the art. Such an approach is broad in concept and can be either explicit or implicit in meaning.

11. Examiner’s Notes are provided to assist the applicant to better understand the nature of the prior art, application of such prior art and, as appropriate, to further indicate other prior art that maybe applied in other office actions. Such comments are entirely consistent with the intent and sprit of compact prosecution. However, and unless otherwise stated, the Examiner’s Notes are not prior art but link to prior art that one of ordinary skill in the art would find inherently appropriate.

12. Examiner’s Opinion: Paragraph 10 and 11 apply. The Examiner has full latitude to interpret each claim in the broadest reasonable sense.

***Conclusion***

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

14. Claims 1-4, 8-18 are rejected.

***Correspondence Information***

15. Any inquiry concerning this information or related to the subject disclosure should be directed to the Examiner Peter Coughlan, whose telephone number is (571) 272-5990. The Examiner can be reached on Monday through Friday from 7:15 a.m. to 3:45 p.m.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor David Vincent can be reached at (571) 272-3687. Any response to this office action should be mailed to:

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

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Peter Coughlan

1/24/2006

